

What is claim d is:

1. A clipping device for judging whether or not vertexes expressed by a predetermined coordinate system are inside or outside a multi-dimensional region of an object to be drawn, comprising:

a clip code generation circuit for generating clip codes obtained by setting data in accordance with results of comparison of coordinates of said vertexes and a judgment reference value of said multi-dimensional region and a negative value of the judgment reference value as bit data;

clip registers for shifting the clip codes generated at said clip code generation circuit; and

15 a logic circuit for performing a logic operation with respect to all bit data set in said clip registers and setting a clip flag indicating whether or not a vertex to be judged is inside or outside the multi-dimensional region of the object to be drawn.

2. A clipping device as set forth in claim 1,

20 wherein:

said coordinates of vertexes include values corresponding to a plurality of coordinate axes of the predetermined coordinate system,

25 said clip code generation circuit generates a plurality of clip codes corresponding to the coordinat

axes, and

 said clip registers hav a capacity for holding
at least said plurality of clip codes.

3. A clipping device as set forth in claim 1,

5 wherein said clip code generation circuit generates said
clip codes based on code data obtained by subtracting an
absolute value of said judgment reference value from the
absolute value of said vertex coordinates, code data of
said vertex coordinates, and code data of said judgment
reference value.

4. A clipping device as set forth in claim 2,

15 wherein said clip code generation circuit generates said
clip codes based on code data obtained by subtracting an
absolute value of said judgment reference value from the
absolute value of said vertex coordinates, code data of
said vertex coordinates, and code data of said judgment
reference value.

5. A clipping device for judging whether vertexes

20 of a primitive expressed by a predetermined coordinate
system are inside or outside of a multi-dimensional
region of an object to be drawn, a polyhedron being drawn
in units of primitives including a plurality of vertexes,
comprising:

25 a clip code generation circuit for generating
clip codes obtained by setting data in accordance with

5 r sults of comparison of v rt x coordinat s of said
primitiv and a judgment r fer nc valu of said multi-
dimensional region and a negative value of the judgment
reference value as bit data for the amount of the
vertexes of the primitive;

 a current clip register for a shifting the clip
codes generated at said clip code generation circuit in
accordance with a control signal;

10 clip registers of at least a number smaller
than the number of the vertexes of said primitive by one
cascade connected to an output of said current clip
register and able to replace the held data with the clip
codes held by the register of a previous stage in
accordance with a control signal;

15 a control circuit for outputting said control
signal to the current clip register when receiving a clip
code generation instruction to shift the clip codes
generated at said clip code generation circuit and
outputting said control signal to a corresponding clip
register so as to replace the clip codes between adjacent
20 clip registers including said current clip register when
receiving a replacement instruction; and

 a logic circuit for performing a logic
operation with respect to all bit data s t in the clip
r gisters including said curr nt clip r gister and

s tting a clip flag indicating wheth r or not th vertex
to be judg d is inside or outside the multi-dim nsional
region of the object to be drawn.

6. A clipping device as set forth in claim 5,
5 wherein said control circuit outputs said control signal
to a corresponding clip register so as to replace the
clip codes along with the vertex processing in accordance
with the type of the primitive.

7. A clipping device as set forth in claim 5,
10 wherein said control circuit generates a vertex ready
flag indicating that the vertexes' worth of clip codes of
said primitive are ready at the time of execution of the
replacement instruction.

8. A clipping device as set forth in claim 6,
15 wherein said control circuit generates a vertex ready
flag indicating that the vertexes' worth of clip codes of
said primitive are ready at the time of execution of the
replacement instruction.

9. A clipping device as set forth in claim 5,
20 wherein said control circuit selectively initializes a
desired register among a plurality of clip registers
including said current clip register under predetermined
conditions.

10. A clipping device as set forth in claim 6,
25 wherein said control circuit selectively initializes a

d sir d r gist r among a plurality of clip r gist rs including said curr nt clip r gist r under pr d t rmin d conditions.

11. A clipping device as set forth in claim 5,
5 wherein:

said coordinates of said vertexes include values corresponding to a plurality of coordinate axes of a predetermined coordinate system,

10 said clip code generation circuit generates a plurality of clip codes corresponding to the coordinate axes, and

said clip registers have capacities for holding at least said plurality of clip codes.

15 12. A clipping device as set forth in claim 5,
wherein the clip code generation circuit generates said
clip codes based on code data obtained by subtracting an
absolute value of said judgment reference value from the
absolute value of said vertex coordinates, code data of
said vertex coordinates, and code data of said judgment
20 reference value.